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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

On re application of

Docket No: Q92193

Kenichi SHIMURA, et al.

Appln. No.: 10/561,213

Group Art Unit: 2811

Confirmation No.: 4042

Examiner: Not Yet Assigned

Filed: December 19, 2005

For: MAGNETIC RANDOM ACCESS MEMORY

**SUBMISSION OF INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

Commissioner for Patents


P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

For the Examiner's convenience, enclosed herewith is a copy of the English translation of the International Preliminary Report on Patentability (IPRP). It is assumed that copies of the cited references as required by §371(c) will be supplied directly by the International Bureau, but if further copies are needed, the undersigned will undertake to provide them upon request.

Respectfully submitted,

  
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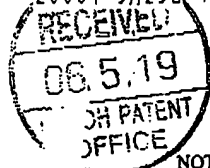
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WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: June 27, 2006



## PCT

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

From the INTERNATIONAL BUREAU

To:

KUDOH, Minoru  
6F, Kadoya Bldg.  
24-10, Minamiooi 6-chome  
Shinagawa-ku, Tokyo 1400013  
JAPON

Date of mailing (day/month/year) 11 May 2006 (11.05.2006)	
Applicant's or agent's file reference 04PCFP993	IMPORTANT NOTIFICATION
International application No. PCT/JP2004/008462	International filing date (day/month/year) 16 June 2004 (16.06.2004)
Applicant NEC CORPORATION et al	

## 1. Transmittal of the translation to the applicant.



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

## 2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

## 3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer  Masashi Honda
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## PATENT COOPERATION TREATY

## PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 04PCFP993	FOR FURTHER ACTION		See item 4 below
International application No. PCT/JP2004/008462	International filing date (day/month/year) 16 June 2004 (16.06.2004)	Priority date (day/month/year) 20 June 2003 (20.06.2003)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant NEC CORPORATION			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report   |
| <input type="checkbox"/> Box No. II           | Priority  |
| <input type="checkbox"/> Box No. III          | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/> Box No. IV           | Lack of unity of invention  |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI           | Certain documents cited   |
| <input type="checkbox"/> Box No. VII          | Certain defects in the international application  |
| <input type="checkbox"/> Box No. VIII         | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. +41 22 740 14 35	Date of issuance of this report 01 May 2006 (01.05.2006)
	Authorized officer  Masashi Honda  Telephone No. +41 22 338 70 10

## PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

04PCTP993

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/JP2004/008462

International filing date (day/month/year)

16.06.2004

Priority date (day/month/year)

20.06.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant

NEC CORPORATION

## 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

## 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/008462

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
- a. type of material
- ☐ a sequence listing
- ☐ table(s) related to the sequence listing
- b. format of material
- ☐ in written format
- ☐ in computer readable form
- c. time of filing/furnishing
- ☐ contained in the international application as filed.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/008462

**Box No. V** Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability:  
citations and explanations supporting such statement

**1. Statement**

Novelty (N)	Claims 1-18	YES
	Claims	NO
Inventive step (IS)	Claims 1-18	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-18	YES
	Claims	NO

**2. Citations and explanations:**

Document 1: US 2003/0111626<sup>1</sup>/A1 (Keiji HOSOTANI) 19 June 2003  
 Document 2: US 6211090<sup>1</sup>/B1 (Mark DURLAM) 03 April 2001  
 Document 3: Durlam M. et al. "A low power 1 Mbit MRAM based on 1T1MTJ bit cell integrated with Copper Interconnects", 2002 Symposium on VLSI Circuits Digest of Technical Papers, pages 158-161  
 Document 4: JP 2002-289807<sup>1</sup>/A (Toshiba Corp.) 11 October 2002  
 Document 5: JP 2002-280526<sup>1</sup>/A (Matsushita Electric Industrial Co., Ltd.) 27 September 2002  
 Document 6: JP 2002-522915<sup>1</sup>/A (Infineon Technologies AG.) 23 July 2002  
 Document 7: JP 2002-110938<sup>1</sup>/A (Toshiba Corp.) 12 April 2002  
 Document 8: JP 9-204770<sup>1</sup>/A (Motorola Inc.) 05 August 1997  
 Document 9: JP 2001-273759<sup>1</sup>/A (Sharp Corp.) 05 October 2001

The inventions of claims 1-18 of various configurations for suppressing the effect of a generated bias magnetic field caused by the magnetic anisotropy of a yoke arranged on a wire for concentrating the magnetic field of a magnetoresistive element, on a MRAM operation are not described in any of the documents cited in the ISR and would not be obvious to a person skilled in the art.